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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,991	01/21/2004	Julio P. Focaracci	5280	5993

22896 7590 06/20/2007  
MILA KASAN, PATENT DEPT.  
APPLIED BIOSYSTEMS  
850 LINCOLN CENTRE DRIVE  
FOSTER CITY, CA 94404

EXAMINER
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SISSON, BRADLEY L

ART UNIT	PAPER NUMBER
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1634

MAIL DATE	DELIVERY MODE
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06/20/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Interview Summary

Application No.

10/762,991

Applicant(s)

FOCARACCI ET AL.

Examiner

/Bradley L. Sisson/

Art Unit

1634

All participants (applicant, applicant's representative, PTO personnel):

(1) /Bradley L. Sisson/

(3) \_\_\_\_\_

(2) Sally A. Swedberg, Ph.D., Reg. No. 53,659

(4) \_\_\_\_\_

Date of Interview: 13 June 2007

Type: a) ☒ Telephonic b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☐ No.

If Yes, brief description: Draft Amendment received 13 June 2007; copy attached

Claim(s) discussed: Proposed claims 1 and 35

Identification of prior art discussed: \_\_\_\_\_

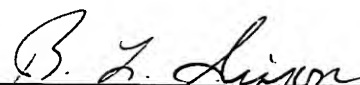
Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

  
Examiner's signature, if required

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Mr. Sisson expressed concern over the claims encompassing a virtually limitless number of array spots (e.g., claim 1) as well as claim 35 reciting an upper limit of 10,000 spots per square millimeter, and that a gasket can be formed around every two test sites ("test sites" being interpreted to encompass at the very least two such test sites). Mr. Sisson noted that the specification does not set forth a reproducible procedure whereby a virtually limitless number of gaskets can be formed around a virtually limitless number of array spots, and that the gaskets can be comprised of virtually any material. Mr. Sisson acknowledged that fairly dense arrays had been known in the art, as well as the use of a laser to create a channel/groove/moat. Mr. Sisson acknowledged the specification teaching at page 8 various materials that can be used to create a gasket. Mr. Sisson added that the specification is silent as to how even one of these materials has been used to create a functioning gasket around any site of any array, much less teach a reproducible procedure whereby the resultant array is useful under 35 USC 101.

Agreement is reached in that the specification must teach how to make and how to use the claimed invention. Mr. Sisson noted that the specification does not teach how any resultant array is to be used in any reproducible procedure. Mr. Sisson noted that if, for example, one were to first create an array of oligonucleotides where, in accordance with claim 35, there are 99,999 different spots in a single square millimeter, and that there is a gasket around every two such test sites, the introduction of a laser to ablate or collapse the porous substrate upon which the array is fashioned, would cause the release of organic vapors, which could negatively impact the functionality of the oligonucleotides found at each of the test sites. The specification is silent as to how such vapors are to be accounted for.

Mr. Sisson also noted that if one were to first create the channel/moat with a laser, and were to then apply the gasket, how would one ensure that the tens of thousands of test sites are not corrupted with the very material used to create the gasket.

Mr. Sisson noted that the claims fairly encompass the production of arrays of oligonucleotides that have electrodes at each of the test sites. If a gasket is put in place around every two such test sites, how then would one generate an electric field so to drive the test sample from one position on the array to that of another, which is outside of the gasket. Mr. Sisson noted that if there is a gasket around every two or more test sites, is there a header that is to mate with the array? And if there is a header, how then do you introduce the test sample, reactants, and remove by products? Mr. Sisson noted that the specification does not address these issues, much less teach how one is to use the resultant array in any method that satisfies the utility requirements of 35 USC 101.

## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews

#### Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

**Sisson, Bradley**

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**From:** Sally A Swedberg [Sally.Swedberg@appliedbiosystems.com]  
**Sent:** Wednesday, June 13, 2007 2:21 PM  
**To:** Sisson, Bradley  
**Subject:** USAN 10/762,991

Dear Examiner Sisson:

Pursuant to our conversation of June 11, 2007, and in light of your comments, please find in the attached a revised set of draft claims for your comment. There is further amendment to Claim 1, and Claims 33-36 have been added.

In closing, your assistance with the case is greatly appreciated.

Best regards,

Sally A. Swedberg, PhD  
Sr. Patent Agent  
Intellectual Property Legal Department

Applera Corporation  
Applied Biosystems Group  
850 Lincoln Centre Drive  
Foster City, CA 94404  
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6/13/07

LISTING OF THE CLAIMS

1. (Currently Amended) A method for ~~preparing~~ manufacturing a substrate for a hybridization array, the method comprising:

positioning a porous layer on the substrate, wherein positioning the porous layer comprises coupling the porous layer ~~on~~ to the substrate; and

collapsing ~~the~~ a portion of the porous layer with a laser to form a moat, wherein the moat is adapted to provide a bound boundary to a portion of ~~the porous layer on which an array can be positioned~~ test sites on the hybridization array.

2. (Previously Presented) The method of claim 1, wherein the collapsing occurs without substantially heating the portion of the porous layer on which the array can be positioned.

3. (Original) The method of claim 1, wherein the porous layer comprises nylon.

4. (Currently Amended) A method for manufacturing, comprising:

providing a substrate comprising a porous layer coupled to the substrate, wherein the porous layer is adapted for depositing an array;

providing a laser assembly, wherein the laser assembly comprises laser;

and

collapsing ~~the~~ a portion of the porous layer with the laser to form a moat.

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**Amended Claims: Response Dated April 30, 2007**  
**Confirmation Number: 5993**  
**Application Serial No.: 10/762,991**  
**Filing Date: Jan. 21, 2004**  
**Focaracci, et al.**

5. (Original) The method of claim 4, wherein laser assembly further comprises at least one of a linear actuator and a galvanometer scan assembly.

6. (Currently Amended) A method for ~~preparing~~ manufacturing a hybridization chamber, comprising:

providing a substrate comprising a porous layer; wherein a portion of the porous layer is collapsed with a laser to form a moat; ~~with a moat collapsed with a laser;~~

positioning an array on a portion of the porous layer bound by the moat;

and

positioning a gasket in the moat to provide a nonporous seal.

7. (Withdrawn) An apparatus for preparing a hybridization substrate, comprising:

a laser assembly adapted to collapse a moat in a porous layer on the substrate; and

a galvanometer scan assembly adapted to position laser light from the laser assembly on the porous layer.

8. (Withdrawn) The apparatus of claim 7, further comprising a thermal path on a bottom portion of the apparatus.

DRAFT

**Amended Claims: Response Dated April 30, 2007**  
**Confirmation Number: 5993**  
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9. (Withdrawn) The apparatus of claim 7, further comprising a linear actuator.
10. (Withdrawn) The apparatus of claim 7, further comprising a vacuum head.
11. (Withdrawn) The apparatus of claim 10, wherein the vacuum head is positioned adjacent to the galvanometer scan assembly.
12. (Withdrawn) A laser assembly, comprising:  
a laser adapted to collapse a moat in a porous layer of a hybridization substrate;  
a mechanism to position the laser light on a portion of the porous layer.
13. (Withdrawn) The laser assembly of claim 12, wherein the mechanism comprises at least one of a linear actuator and a galvanometer scan assembly.
14. (Withdrawn) A substrate for hybridization, comprising:  
a porous layer, wherein the porous layer is adapted for depositing an array; and  
a moat in the porous layer, wherein the moat is collapsed by laser.

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**Amended Claims: Response Dated April 30, 2007**  
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15. (Withdrawn) The substrate of claim 14, further comprising an array.
16. (Withdrawn) The substrate of claim 15, further comprising a hybridization fluid.
17. (Withdrawn) An apparatus for preparing a substrate for hybridization comprising means for providing a moat in a porous layer on a substrate by laser means, wherein the porous layer is adapted for depositing an array.
18. (Withdrawn) The apparatus of claim 17, wherein the means for providing a moat comprise means for positioning the laser means.
19. (Withdrawn) The apparatus of claim 17, further comprising means for spotting the array on the substrate.
20. (Withdrawn) A system for automated preparation of substrates for hybridization comprising:
- a first linear actuator to position a laser assembly, wherein the laser assembly comprises a laser and a galvanometer scan assembly, wherein the galvanometer scan assembly is mounted on a second linear actuator; and
  - a third linear actuator to position a slide holder.

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**Amended Claims: Response Dated April 30, 2007**  
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21. (Withdrawn) The system of claim 20, further comprising a fourth linear actuator to position a spotting head.

22. (Withdrawn) The system of claim 20, further comprising a camera to inspect a moat on the substrate.

22. (Withdrawn) The system of claim 20, further comprising a camera to inspect a moat on the substrate.

23. (Previously Presented) The method of claim 4, further comprising conducting heat away from a bottom portion of the substrate and retaining heat to focus on the moat.

24. (Currently Amended) The method of claim 4, further comprising providing a vacuum head for removing gasses generated by the collapsing of the a portion of the porous layer with the laser to form a moat.

25. (Previously Presented) The method of claim 4, further comprising spotting an array on the substrate.

26. (Previously Presented) The method of claim 4, further comprising:

positioning the laser assembly with a first linear actuator;

providing a galvanometer scan assembly;

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Amended Claims: Response Dated April 30, 2007  
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positioning the galvanometer scan assembly with a second linear actuator;  
and

positioning the substrate with a third linear actuator.

27. (Previously Presented) The method of claim 4, further comprising  
spotting an array on the substrate with a spotting head.

28. (Previously Presented) The method of claim 26, further comprising  
positioning the spotting head with a fourth linear actuator.

29. (Previously Presented) The method of claim 4, further comprising  
imaging the substrate with a camera to provide images of the moat for  
inspection.

30. (Currently Amended) The method of claim 6, wherein providing the  
substrate comprises positioning light from the laser with a galvanometer scan  
assembly to collapse a portion of the porous layer to form the moat, ~~with a  
galvanometer scan assembly.~~

31. (Currently Amended) The method of claim 6, wherein positioning  
the array comprises spotting the array on the substrate after collapsing a portion  
of the porous layer to form the moat.

**Amended Claims: Response Dated April 30, 2007**  
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32. (Previously Presented) The method of claim 6, wherein positioning the gasket in the moat comprises providing adhesive between the gasket and the substrate.

33. (New) The method of Claim 1, wherein the test sites are a subset of the hybridization array.

34. (New) The method of Claim 1, wherein the test sites comprise the entire hybridization array.

35. (New) The method of Claim 1, wherein the test sites of the hybridization array have densities of between about 4 binding sites per square millimeter to about  $10^4$  binding sites per square millimeter.

36. (New) The method of Claim 1, further comprising positioning a gasket in the moat to provide a nonporous seal.

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